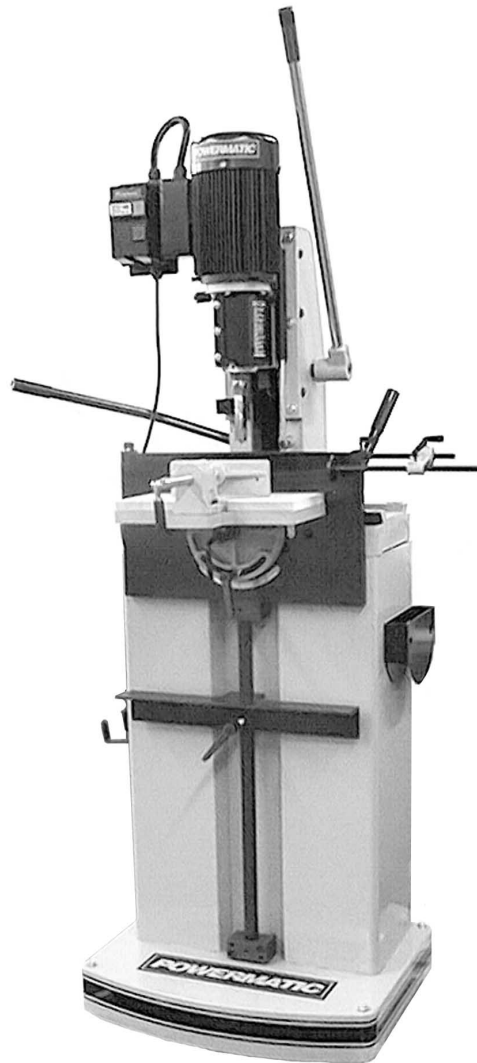


POWERMATIC[®]

WMH | TOOL GROUP

Operating Instructions and Parts Manual Heavy-Duty Mortiser Model 720HD



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Revision A 7/05
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This manual has been prepared for the owner and operators of a Powermatic Model 720HD Mortiser. Its purpose, aside from machine operation, is to promote safety using accepted operating and maintenance procedures. To obtain maximum life and efficiency from your mortiser and to aid in using it safely, please read this manual thoroughly and follow the instructions carefully.

Warranty and Service

WMH Tool Group warrants every product it sells. If one of our tools needs service or repair, one of our Authorized Repair Stations located throughout the United States can provide quick service or information.

In most cases, a WMH Tool Group Repair Station can assist in authorizing repair work, obtaining parts, or perform routine or major maintenance repair on your Powermatic product.

For the name of an Authorized Repair Station in your area, please call 1-800-274-6848, or visit our web site at www.wmhtoolgroup.com

More Information

Remember, WMH Tool Group is consistently adding new products to the line. For complete, up-to-date product information, check with your local WMH Tool Group distributor, or visit our web site at www.wmhtoolgroup.com

WMH Tool Group Warranty

WMH Tool Group makes every effort to assure that its products meet high quality and durability standards and warrants to the original retail consumer/purchaser of our products that each product be free from defects in materials and workmanship as follows: 1 YEAR LIMITED WARRANTY ON ALL PRODUCTS UNLESS SPECIFIED OTHERWISE. This Warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence or accidents, normal wear-and-tear, repair or alterations outside our facilities, or to a lack of maintenance.

WMH TOOL GROUP LIMITS ALL IMPLIED WARRANTIES TO THE PERIOD SPECIFIED ABOVE, BEGINNING FROM THE DATE THE PRODUCT WAS PURCHASED AT RETAIL. EXCEPT AS STATED HEREIN, ANY IMPLIED WARRANTIES OR MERCHANTABILITY AND FITNESS ARE EXCLUDED. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG THE IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. IN NO EVENT SHALL WMH TOOL GROUP BE LIABLE FOR DEATH, INJURIES TO PERSONS OR PROPERTY, OR FOR INCIDENTAL, CONTINGENT, SPECIAL, OR CONSEQUENTIAL DAMAGES ARISING FROM THE USE OF OUR PRODUCTS. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

To take advantage of this warranty, the product or part must be returned for examination, postage prepaid, to an Authorized Repair Station designated by our office. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection discloses a defect, we will either repair or replace the product at our discretion, or refund the purchase price if we cannot readily and quickly provide a repair or replacement. We will return the repaired product or replacement at WMH Tool Group's expense, but if it is determined there is no defect, or that the defect resulted from causes not within the scope of WMH Tool Group's warranty, then the user must bear the cost of storing and returning the product. This warranty gives you specific legal rights; you may also have other rights, which vary from state to state.

WMH Tool Group sells through distributors only. Members of the WMH Tool Group reserve the right to effect at any time, without prior notice, alterations to parts, fittings and accessory equipment, which they may deem necessary for any reason whatsoever.

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Warnings

1. Read and understand the entire owners manual before attempting assembly or operation.
2. Read and understand the warnings posted on the machine and in this manual. Failure to comply with all of these warnings may cause serious injury.
3. Replace the warning labels if they become obscured or removed.
4. This mortiser is designed and intended for use by properly trained and experienced personnel only. If you are not familiar with the proper and safe operation of a mortiser, do not use until proper training and knowledge have been obtained.
5. Do not use this mortiser for other than its intended use. If used for other purposes, WMH Tool Group disclaims any real or implied warranty and holds itself harmless from any injury that may result from that use.
6. Always wear approved safety glasses/face shields while using this mortiser. Everyday eyeglasses only have impact resistant lenses; they are not safety glasses.
7. Before operating this mortiser, remove tie, rings, watches and other jewelry, and roll sleeves up past the elbows. Remove all loose clothing and confine long hair. Non-slip footwear or anti-skid floor strips are recommended. Do **not** wear gloves.
8. Wear ear protectors (plugs or muffs) during extended periods of operation.
9. Some dust created by power sanding, sawing, grinding, drilling and other construction activities contain chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:
 - Lead from lead based paint.
 - Crystalline silica from bricks, cement and other masonry products.
 - Arsenic and chromium from chemically treated lumber.Your risk of exposure varies, depending on how often you do this type of work. To reduce your exposure to these chemicals, work in a well-ventilated area and work with approved safety equipment, such as face or dust masks that are specifically designed to filter out microscopic particles.
10. Do not operate this machine while tired or under the influence of drugs, alcohol or any medication.
11. Make certain the machine is properly grounded.
12. Make all machine adjustments or maintenance with the machine unplugged from the power source.
13. Remove adjusting keys and wrenches. Form a habit of checking to see that keys and adjusting wrenches are removed from the machine before turning it on.
14. Keep safety guards in place at all times when the machine is in use. If removed for maintenance purposes, use extreme caution and replace the guards immediately.
15. Check damaged parts. Before further use of the machine, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
16. Provide for adequate space surrounding work area and non-glare, overhead lighting.
17. Keep the floor around the machine clean and free of scrap material, oil and grease.
18. Keep visitors a safe distance from the work area. **Keep children away.**
19. Make your workshop child proof with padlocks, master switches or by removing starter keys.
20. Give your work undivided attention. Looking around, carrying on a conversation and “horse-play” are careless acts that can result in serious injury.



Warnings

21. Maintain a balanced stance at all times so that you do not fall or lean against the auger and chisel or other moving parts. Do not overreach or use excessive force to perform any machine operation.
22. Use the right tool at the correct speed and feed rate. Do not force a tool or attachment to do a job for which it was not designed. The right tool will do the job better and safer.
23. Use recommended accessories; improper accessories may be hazardous.
24. Maintain tools with care. Keep augers and chisels sharp and clean for the best and safest performance. Follow instructions for lubricating and changing accessories.
25. Make sure the work piece is securely clamped against table and/or fence. Never use your hand to hold the work piece.
26. Do not turn on the power while the auger or chisel is contacting a workpiece.
27. Turn off the machine before cleaning. Use a brush or compressed air to remove chips or debris — do not use your hands.
28. Do not stand on the machine. Serious injury could occur if the machine tips over.
29. Never leave the machine running unattended. Turn the power off and do not leave the mortiser until the auger comes to a complete stop.
30. Remove loose items and unnecessary work pieces from the area before starting the machine.

Familiarize yourself with the following safety notices used in this manual:

CAUTION

This means that if precautions are not heeded, it may result in minor injury and/or possible machine damage.

WARNING

This means that if precautions are not heeded, it may result in serious injury or possibly even death.

- - SAVE THESE INSTRUCTIONS - -

Introduction

This manual is provided by WMH Tool Group covering the safe operation and maintenance procedures for a Model 720HD Heavy-Duty Mortiser. This manual contains instructions on installation, safety precautions, general operating procedures, maintenance instructions and parts breakdown. This machine has been designed and constructed to provide years of trouble free operation if used in accordance with instructions set forth in this manual. If there are any questions or comments, please contact either your local supplier or WMH Tool Group. WMH Tool Group can also be reached at our web site: www.wmhtoolgroup.com.

Specifications

Model Number	720HD
Stock Number	1791309
Chuck Capacity (in.)	1/2
Spindle Taper	JT33
Bushing Inside Diameter (in.)	3/4, 5/8 and 1-1/8
Chisel Stroke (in.)	6-1/8
Maximum Chisel Travel (in.):	
Side to Side	9-1/8
Front to Back	3-3/8
Table Size (L x W)(in.)	14-5/8 x 7-1/8
Maximum Workpiece Height – without Table (in.)	46
Maximum Workpiece Height – with Table (in.)	11-1/2
Clamp Surface (L x W)(in.)	8 x 2-3/4
Table Tilt (deg.)	90 left, 45 right
Fence Size (L x W)(in.)	20-1/2 x 11-3/4
Base Size (L x W)(in.)	25-1/2 x 21-1/2
Overall Height (in.)	80
Motor	TEFC, 1.5HP, 1Ph, 230V only
Motor Speed (RPM)	1,720
Approximate Shipping Weight (lbs.)	575
Approximate Net Weight (lbs.)	490

The above specifications were current at the time this manual was published, but because of our policy of continuous improvement, WMH Tool Group reserves the right to change specifications at any time and without prior notice, without incurring obligations.

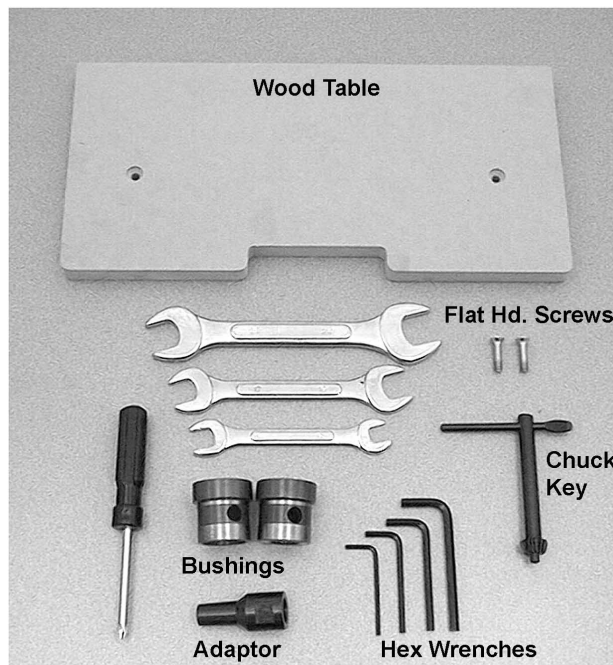
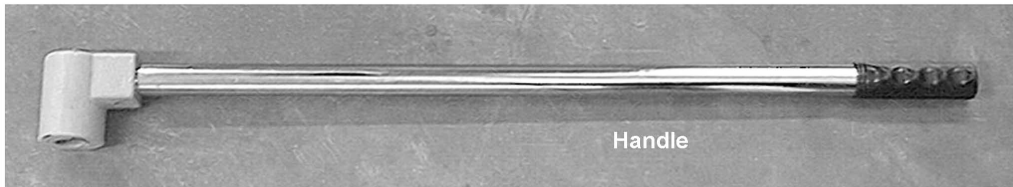
Unpacking

Remove all crating and plastic from around the Mortiser. Check for shipping damage; report any damage immediately to your distributor and shipping agent. Do not discard any shipping material until the Mortiser is assembled and running properly.

Open the cabinet rear door and remove any boxes and accessory items. Compare these with the following parts list to make sure all parts are intact. Missing parts, if any, should be reported to your distributor. Read the instruction manual thoroughly for assembly, maintenance and safety instructions.

Contents of the Shipping Container

- 1 Mortiser
- 1 Handle
- 1 Chisel and Auger set – 3/4"
- 1 Chisel and Auger set - 1"
- 3 Bushings - 5/8", 3/4" and 1-1/8" I.D.
(NOTE: The 5/8" bushing is already installed on the mortiser)
- 3 Combination Wrenches: 12-14, 17-19, 22-24
- 4 Hex (Allen) Wrenches: 3, 4, 5 and 6mm
- 1 Chuck Key
- 1 Chuck Extension Adaptor
- 1 Wood Table
- 2 Phillips Flat Head Screws, M6 x 20L
- 1 Reversible (Cross Point/Flat Head) Screwdriver
- 1 Owner's Manual
- 1 Warranty Card



⚠ WARNING

Read and understand the entire contents of this manual before attempting set-up or operation! Failure to comply may cause serious injury.

Assembly

Tools required for assembly

forklift or hoist with straps/slings
14mm wrench (provided)
4 and 6mm hex wrenches (provided)

1. Remove the four screws that secure the Mortiser to the wood pallet, using a 14mm wrench.
2. With a forklift or hoist, lift the machine off the pallet and into its desired location.
3. The Mortiser should be located in a dry area, on a sturdy, level floor, and with sufficient lighting. Leave plenty of space around the machine for operations and routine maintenance work.
4. If desired, the Mortiser can be further stabilized by securing it to the floor, using lag screws through the four holes in the base.

⚠WARNING The mortiser should be disconnected from the power source during assembly procedures.

5. Unpainted areas of the machine have been treated with a rust preventative. This should be removed with a soft cloth and a mild solvent. Do not use paint thinner, lacquer thinner, gasoline or mineral spirits; these will damage painted surfaces and plastic parts. Do not use an abrasive pad.

Installing Handle

1. Use a 4mm hex wrench to remove the screw, washer and spring from the shaft (Figure 1).
2. Mount the hub of the handle onto the shaft as shown. Make sure the hub slides all the way onto the shaft.
3. Re-install spring, washer and screw. Tighten screw.

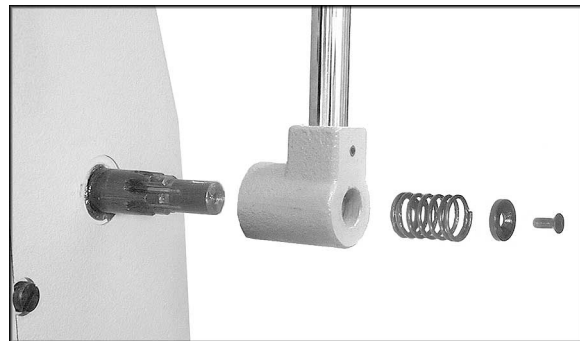


Figure 1

Installing Wood Table

1. To install the wood table, first *remove* the right hand screw at the right of the clamp (Figure 2), with a 6mm hex wrench, and *loosen* the left hand screw from beneath. Pivot the clamp out of the way.
2. Mount the wood table with two flat head screws as shown.
3. Re-position the clamp and install the screw.

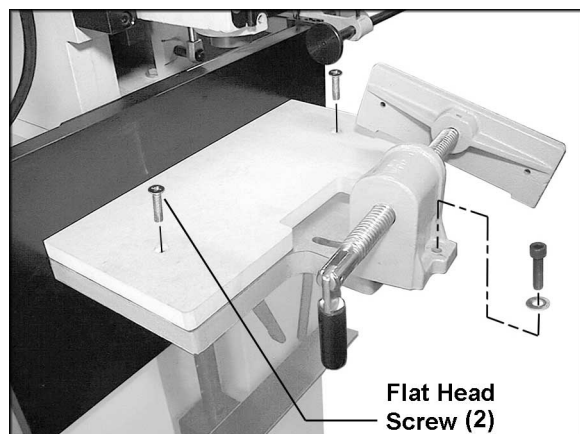


Figure 2

Installing Bushing, Chisel and Auger

1. The mortiser should be disconnected from power source.
2. Open the chuck access cover (A, Figure 3).
3. Insert a bushing (B, Figure 3) into the hole with the bushing's hole facing the front toward the set screw (C, Figure 3).

NOTE: The Mortiser is shipped with the 5/8" bushing pre-installed.)

4. Tighten the set screw (C, Figure 3) with a 4mm hex wrench just enough to hold bushing in place.
5. Place the chisel (D, Figure 3) and auger (E, Figure 3) beneath the bushing and allow the auger to rest upon the table while pushing the chisel up through the bushing.
6. The cutting portion of the auger must clear the chisel by about 1/16" to 3/16", depending upon the type of wood to be worked. Place a "spacer" of 1/8" to 3/16" diameter (a hex wrench works well) between bushing and chisel, and push chisel up until it contacts the spacer.
7. Tighten the set screw (C, Figure 3) to hold the chisel in place, and remove spacer.
8. Push the auger up through the chisel opening and into the chuck as far as it will go. Tighten the auger in the chuck using the chuck key.
9. Loosen the set screw (C, Figure 3) and push the chisel all the way up until it contacts the bushing. This should provide the proper distance so that the cutting portion of the auger clears the chisel. Tighten the set screw (C, Figure 3).

NOTE: Set the slot in the side of the chisel to the left or right, if the cut is to be done laterally; and front or back if the cut is to be done front to back. The chisel slot should always be positioned so chips are being released into the already-cut part of the workpiece.

10. Close the chuck access cover (A, Figure 3) before operating.

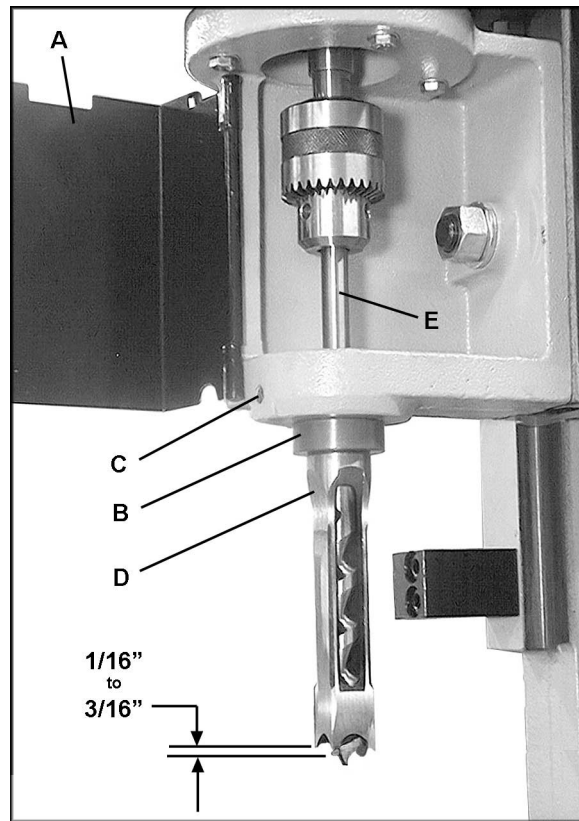


Figure 3

Grounding Instructions

⚠WARNING Electrical connections must be made by a qualified electrician in compliance with all relevant codes. This machine must be properly grounded to help prevent electrical shock and possible fatal injury.

This machine must be grounded. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock.

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor, with insulation having an outer surface that is green with or without yellow stripes, is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded. Use only three wire extension cords that have three-prong grounding plugs and three-pole receptacles that accept the tool's plug.

The Mortiser is factory wired for 230 volt. You may either install a plug or "hard-wire" the machine directly to a control panel.

If you are connecting a plug, use a proper UL/CSA listed grounding plug suitable for 230 volt operation, similar to that shown in Figure 4.

The Mortiser with a 230 volt plug should only be connected to an outlet having the same configuration. No adapter is available or should be used with the 230 volt plug.

If the Mortiser is to be hard-wired to a panel, make sure a disconnect is available for the operator. During hard-wiring of the Mortiser, make sure the fuses have been removed or the breakers have been tripped in the circuit to which the Mortiser will be connected. Place a warning placard on the fuse holder or circuit breaker to prevent it being turned on while the machine is being wired.

Make sure the voltage of your power supply matches the specifications on the motor plate of the Mortiser.

Extension cords

If an extension cord is necessary, make sure the cord rating is suitable for the amperage listed on the machine's motor plate. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating.

Use the chart in Figure 5 as a general guide in choosing the correct size cord. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

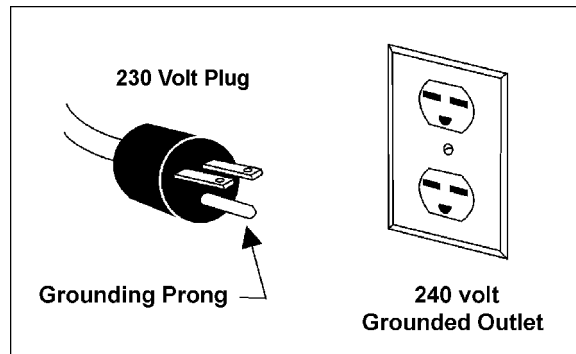


Figure 4

Recommended Gauges (AWG) of Extension Cords

Amps	Extension Cord Length *					
	25 feet	50 feet	75 feet	100 feet	150 feet	200 feet
< 5	16	16	16	14	12	12
5 to 8	16	16	14	12	10	NR
8 to 12	14	14	12	10	NR	NR
12 to 15	12	12	10	10	NR	NR
15 to 20	10	10	10	NR	NR	NR
21 to 30	10	NR	NR	NR	NR	NR

*based on limiting the line voltage drop to 5V at 150% of the rated amperes.

NR: Not Recommended.

Figure 5

Adjustments

Squaring Table To Chisel

1. Place a square upon the table and against the chisel, as shown in Figure 6.
2. If the table and chisel are not perpendicular to each other, loosen the table's stud with the attached hex wrench (A, Figure 6).
3. Loosen the locking handle (B, Figure 6) and adjust the table until the table and chisel are square.
4. Re-tighten the stud (A, Figure 6) and locking handle (B, Figure 6).
5. Make sure the pointer aligns with zero on the scale. Loosening the screw on the pointer will allow slight adjustment of the pointer if necessary.

NOTE: The locking handle (B, Figure 6) can be rotated out of the way. Simply lift up on the handle, rotate it on the pin, then release the handle, making sure it seats itself properly on the pin.

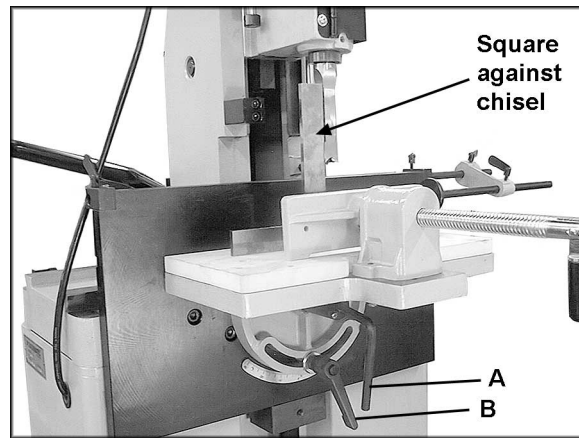


Figure 6

Setting Table to Vertical Position

For table angles from 45° to 90°:

1. Loosen the stud (A, Figure 7).
2. Unscrew and remove the locking handle (B, Figure 7).
3. Rotate the table to vertical position and install the locking handle (B, Figure 7) into the other hole as shown.
4. Adjust the table to the desired angle and tighten both stud and locking handle.

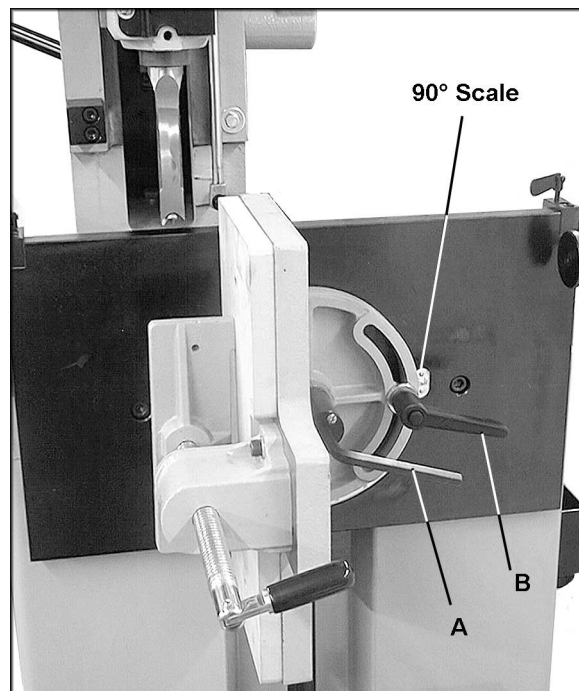


Figure 7

Table Removal and Storage

The table can be removed for mortising large workpieces using the lower work support.

First remove the locking handle (B, Figure 7), then unscrew and remove the stud (A, Figure 7).

The table can be stored in the rack at the side of the cabinet. See Figure 8.

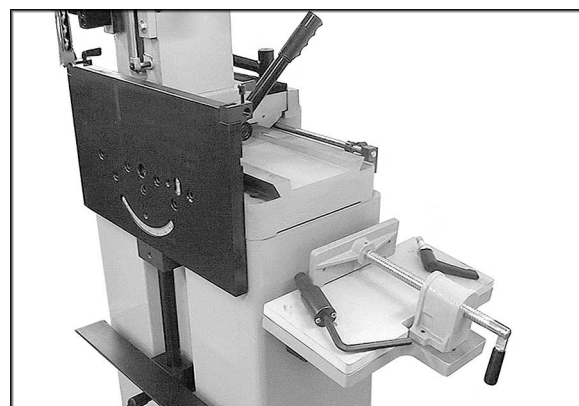


Figure 8

Chuck Extension Adaptor

The provided Chuck Extension Adaptor is used to lower the chuck for use with after-market chisels (chisels other than those supplied with your machine) that may require a spacer due to varying lengths in shanks.

1. To install the adaptor, first remove the chisel and auger.
2. It may be necessary to remove the bushing to provide enough clearance when installing the chuck and adaptor. If so, loosen the set screw and remove the bushing.
3. Hold the spindle stationary by placing a wrench on the flats of the spindle (see Figure 9). With your other hand, insert the chuck key into the chuck and use it to twist the entire chuck, until the chuck releases from the tapered spindle. Do not allow the chuck to drop, as it can be damaged.
4. Push the adaptor into the chuck (Figure 9). Then push this assembly onto the spindle.
5. Re-install the bushing and secure it loosely with the set screw.
6. Re-install the chisel and auger. See "Installing Bushing, Chisel and Auger".

Depth Setting Rod

The depth setting rod (Figure 10) limits the depth of the stroke.

1. Lower the mortising head until the chisel is at the desired depth.
2. Loosen the locking handle and slide the depth rod down until the collar contacts the block.
3. Tighten the locking handle.

Head Movement

The three handles for head movement (explained below) are spring loaded, and can be adjusted to different positions for the convenience of the operator. Pull up on the handle close to its hub and rotate it, allowing it to drop back down onto the pin. See Figure 11. Make sure the handle re-seats itself properly on the pin.

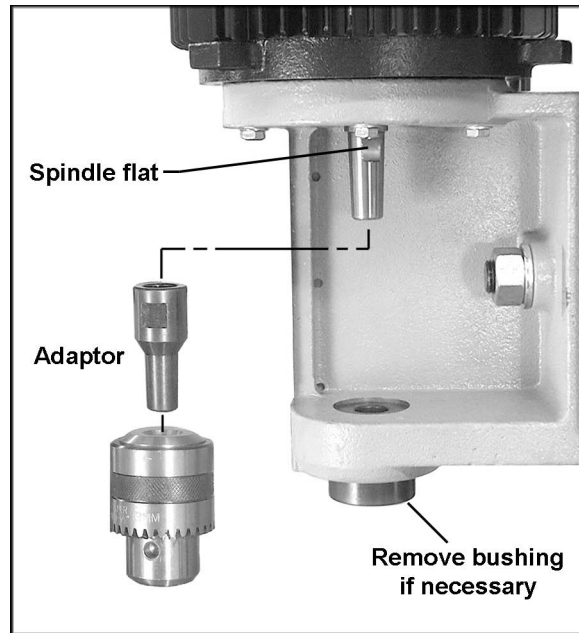


Figure 9

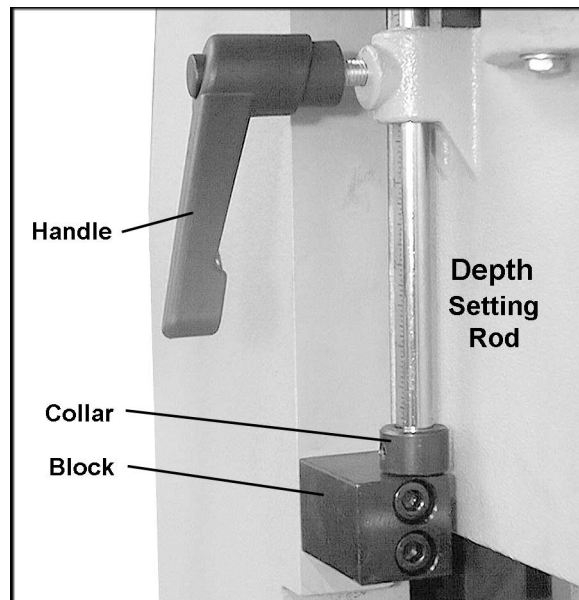


Figure 10

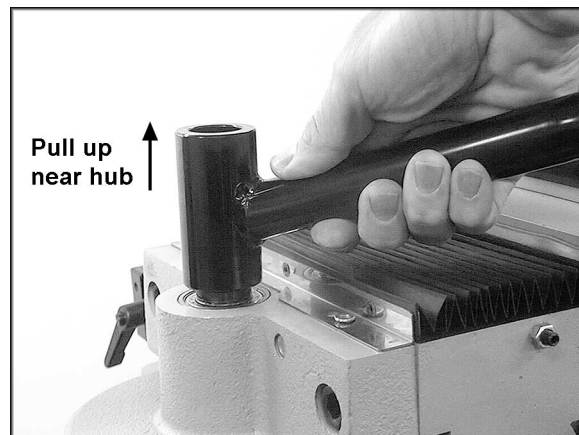


Figure 11

Lateral (X Axis)

Use the handle (A, Figure 12) to move the head right or left. The lateral stops should be set in accordance with the length of the mortise cut (see "Setting Lateral Stops").

Up/Down (Z Axis)

Handle B, Figure 12.

Forward/Backward (Y Axis)

Loosen the Y-Axis locking handle (shown in Figure 18) and move the handle (C, Figure 12).

NOTE: When making lateral cuts the Y-Axis locking handle (Figure 18) should be tightened.

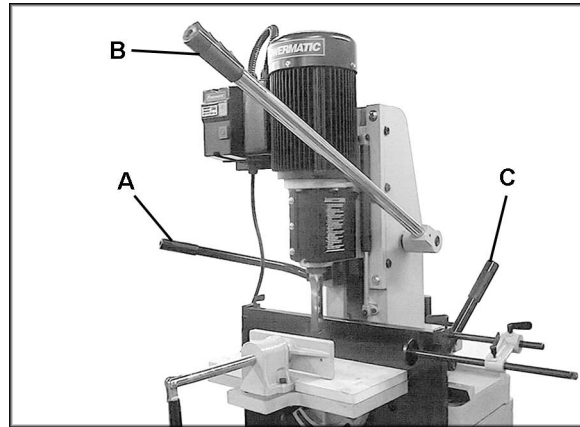


Figure 12

Clamp

The clamp (Figure 13) has a quick release feature; push the handle forward to move the jaw against the workpiece, then further tighten the clamp by rotating the handle. The clamp jaw can also be retracted by loosening the handle about a half turn, and then pulling it outward.

The clamp can be swiveled for tapered workpieces. Loosen both screws (one is shown in Figure 13) and swivel the clamp as needed. Re-tighten both screws.

If you do not wish to mar a soft workpiece, you can mount a board to the face of the clamp jaw, using screws (not provided) through the two holes in the jaw.

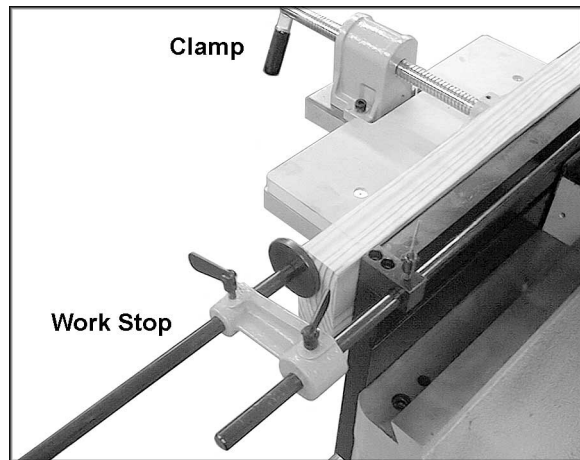


Figure 13

Stock Stop

The stock stop, shown in Figure 13, is useful for repetitive cuts of the same length, and can be mounted to either end of the fence. Loosen the wing screws to adjust.

Setting Lateral Stops

Loosen the locking handles and slide the lateral stops (Figure 14) to the desired position. Re-tighten the locking handles.

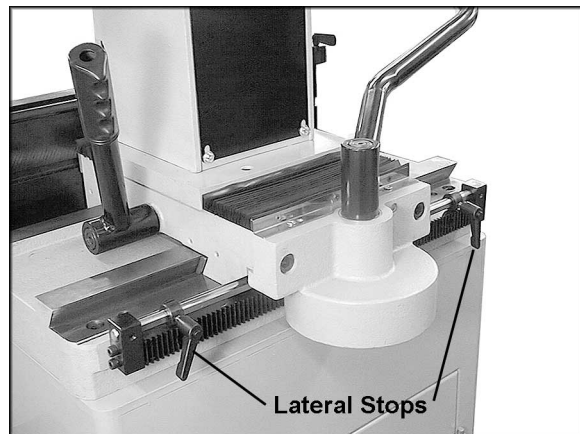


Figure 14

Chisel Parallel to Workpiece

For accurate mortise cuts, the chisel must be parallel to the workpiece. The workpiece should be cut square for this adjustment to be accurate. Check and adjust this parallelism as follows:

1. Move the head forward far enough that the workpiece can be inserted between fence and chisel.
2. Slightly loosen the set screw to allow the chisel to be rotated.
3. Move the head back carefully until the face of the chisel rests against the workpiece, but do not force. See Figure 15.
4. If needed, further adjust the chisel by hand.
5. Tighten set screw, making sure the chisel maintains contact with the bushing.

Lower Work Support

To use the lower work support, remove the table (see "Table Removal and Storage"). Loosen the locking handle (Figure 16) and slide the lower work support into position. Re-tighten the handle securely.

Re-setting the Head

The head can be adjusted in order to achieve the maximum workpiece height.

1. Place a block of wood for support between the head and fence (Figure 17). Lower the head until it rests upon the block.
2. Loosen only slightly the hex nut (A, Figure 17).
3. Pull down the handle (B, Figure 17) until the cylinder (C, Figure 17) bottoms out.
4. Tighten the hex nut (A, Figure 17).

Gib Adjustment

The tightness of the gibs has been set at the factory and should not require adjustment. As parts wear through long-term use, or "play" develops in the gib, adjustments can be made as follows. NOTE: Gib tightness should be just enough to allow smooth movement without binding.

Gib for Vertical Movement

1. Slightly loosen the three hex cap screws (D, Figure 17) which hold the gib.
2. Turn the gib screws (E, Figure 17) until any play is removed.
3. Re-tighten the hex cap screws (D, Figure 17) securely.

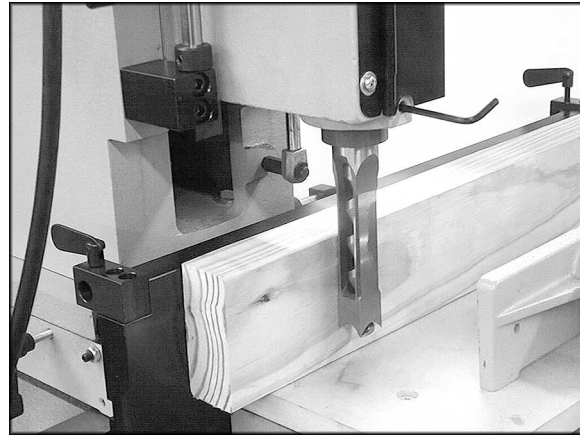


Figure 15

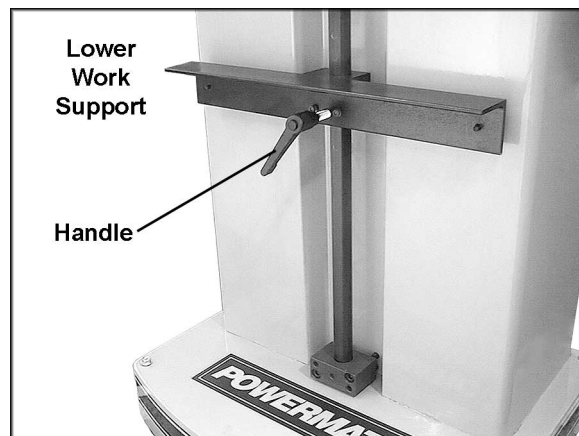


Figure 16

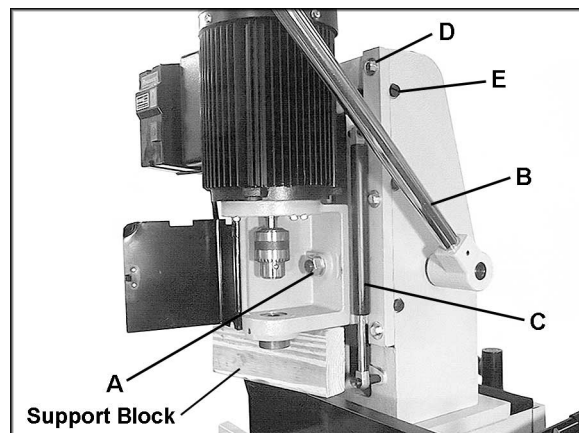


Figure 17

Gib for Front-to-Back Movement

1. Remove the two screws on the pleated dust cover (F, Figure 18) and move the dust cover out of the way.
2. Loosen the three hex nuts (G, Figure 18) with a 10mm wrench.
3. Turn the three set screws (H, Figure 18) with a 3mm hex wrench, until play is eliminated on the gib (J, Figure 18).
4. Re-tighten the three hex nuts (G, Figure 18)
NOTE: Hold the set screws so they do not turn during the tightening process.
5. Re-install the pleated dust cover (F, Figure 18) before operating.

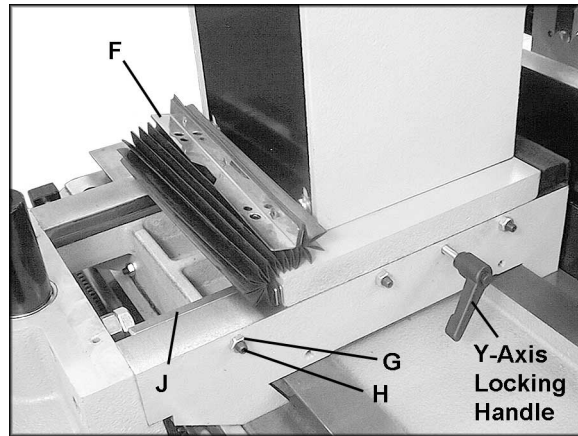


Figure 18

Gib for Lateral Movement

1. Remove the two screws on the pleated dust cover (F, Figure 19) and move the dust cover out of the way.
2. Loosen the three hex nuts (K, Figure 19) with a 10mm wrench.
3. Turn the three set screws (L, Figure 19) until all play is eliminated on the gib (M, Figure 19).
4. Re-tighten the three hex nuts (K, Figure 19).
NOTE: Hold the set screws so they do not turn during the tightening process.
5. Re-install the pleated dust cover (F, Figure 19) before operating.

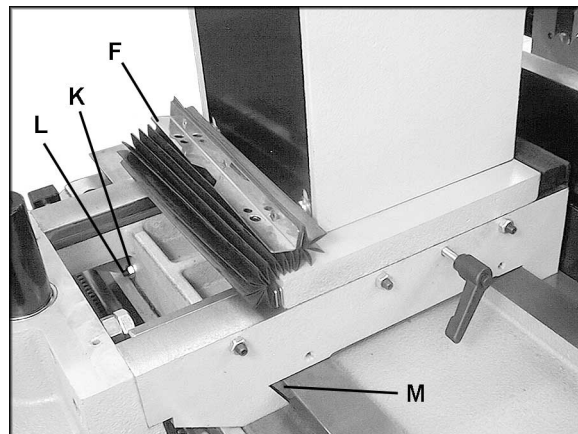


Figure 19

Tool Storage

The cabinet shelf contains a perforated cushion for the accessories, as shown in Figure 20.

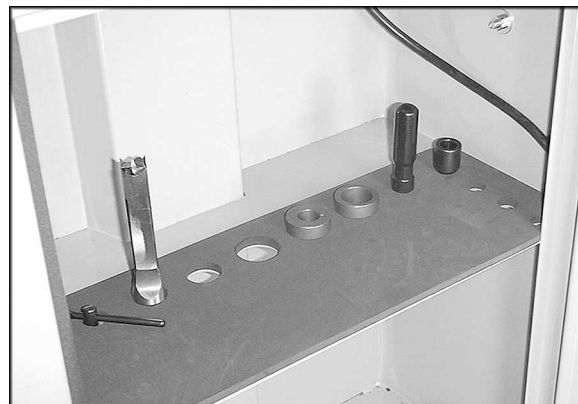


Figure 20

Operating Controls

The magnetic starter with control buttons is mounted to the motor. Press the “start” button to begin rotation of the auger. Press the “stop” button to stop rotation of the auger. The auger will quickly coast to a stop after the “stop” button is pressed.

The magnetic starter is a valuable safety feature of the Mortiser. Should electrical power suddenly be cut off while the mortiser is being operated, the magnetic starter will prevent the machine from immediately re-starting when power is restored. To re-start the Mortiser you must press the “on” button.

Operation

General operating procedure:

1. Position workpiece on table and secure with clamp.
2. Set depth stop.
3. For lateral cuts, adjust positive stops according to length of cut.
4. Position head front-to-back and laterally for the first cut. If making a lateral cut, make sure the Y-axis locking handle is tightened.
5. Turn on the machine and feed the chisel and bit steadily into the workpiece.

IMPORTANT: The rate of feed must be fast enough to prevent burning at the tip of the bit, but not so fast as to cause the machine to slow or stall. The different rates of feed for different woods must be learned by experience.

6. After the first cut, the head is moved using one of the handles for each successive cut. The direction of movement must allow the chips to clear freely. Move the workpiece so that the slot in the chisel is releasing chips into the already-cut part of the workpiece (Figure 21).

CAUTION Do not have the chisel slot against the blind end of the mortise, as the chips will not be able to clear the chisel. This can cause overheating and possible breakage of chisel or bit.

When cutting deep mortises, make the cut in several stages of approximately 1" each, to allow chips to clear. When cutting through-mortises, to prevent breakout at the back of the workpiece and damage to the work table, use a piece of scrap material under the workpiece as support.

Maintenance

WARNING Before doing maintenance on the mortiser, disconnect it from the electrical supply by pulling out the plug or switching off the main switch. Failure to comply may cause serious injury.

The Mortiser requires only minor maintenance, such as cleaning and lubrication and routine adjustment and sharpening of the chisel and bit.

Wipe down the Mortiser after each use and, as necessary, use light applications of oil or grease to lubricate linkages, moving parts, etc.

If the power cord is worn, cut, or damaged in any way, have it replaced immediately.

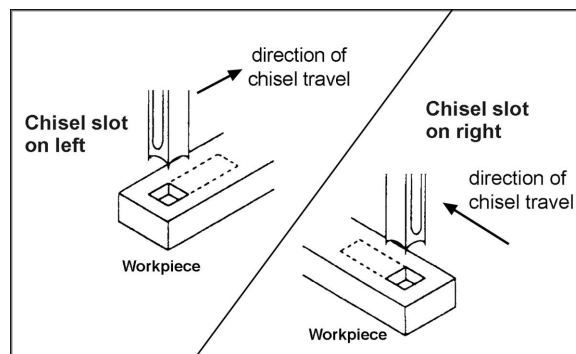


Figure 21

Sharpening Chisel and Auger

The chisel and auger should be kept sharp for best performance. If cutting operations require excessive force, the chisel and/or auger are probably dull and should be sharpened. Blunt edges will give inaccurate mortises and can lead to overheating and breakage of chisel or auger. If chisel and auger are badly worn and become difficult to sharpen, they should be replaced.

Chisel

Sharpen the chisel with a mortise chisel cutter with the correct size pilot. (Pilot size will differ depending on the size of your chisel.) Two or three turns of the cutter in a carpenter's brace chuck should be enough to sharpen the chisel, as shown in Figure 22.

Use a small, triangular, smooth file to relieve the inner corners of the chisel (Figure 23). Remove any burrs from the outside of the chisel with a fine oilstone.

Auger

Sharpen the auger by using a small, smooth file, following the original shape of the auger. File the *inside* edge of the spur, the sides of the brad point, and the cutting edge inwards toward the flute of the auger. See Figure 24.

Do **not** file the outside edge of the spur, as this will affect the diameter of the auger.

Lubrication

All ball bearings are sealed. They require no further lubrication.

Periodically grease the gears, racks, and table pivot points with a #2 tube grease.

Periodically clean and apply grease or oil to any exposed machine surfaces, such as dove-tailed ways and slides.

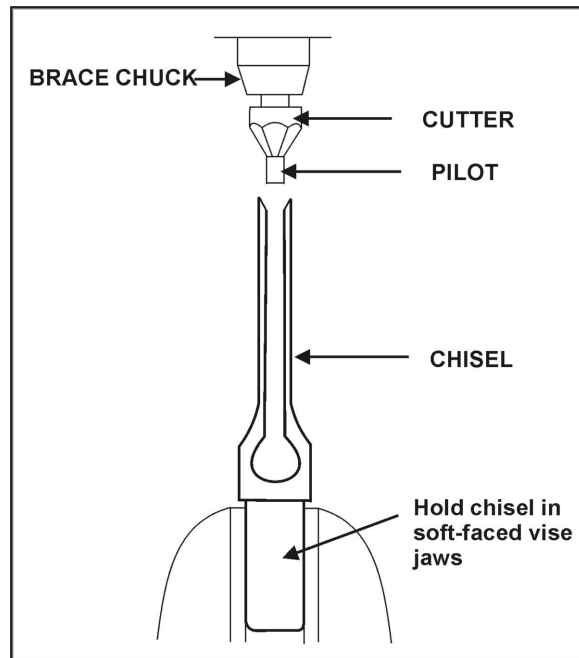


Figure 22

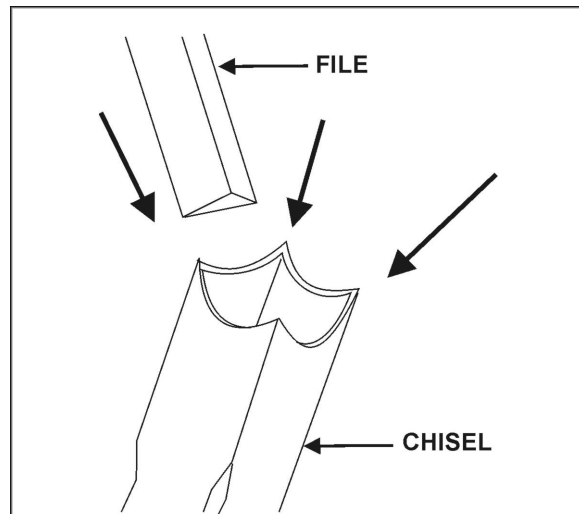


Figure 23

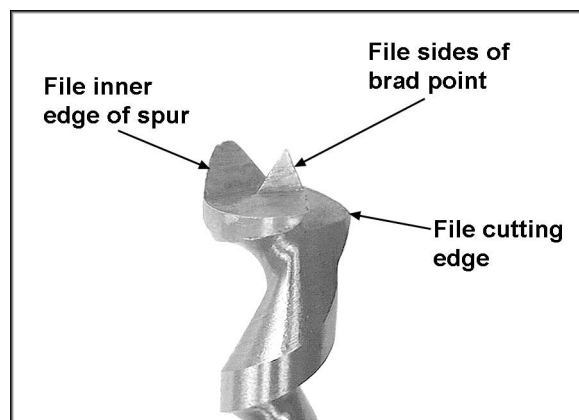


Figure 24

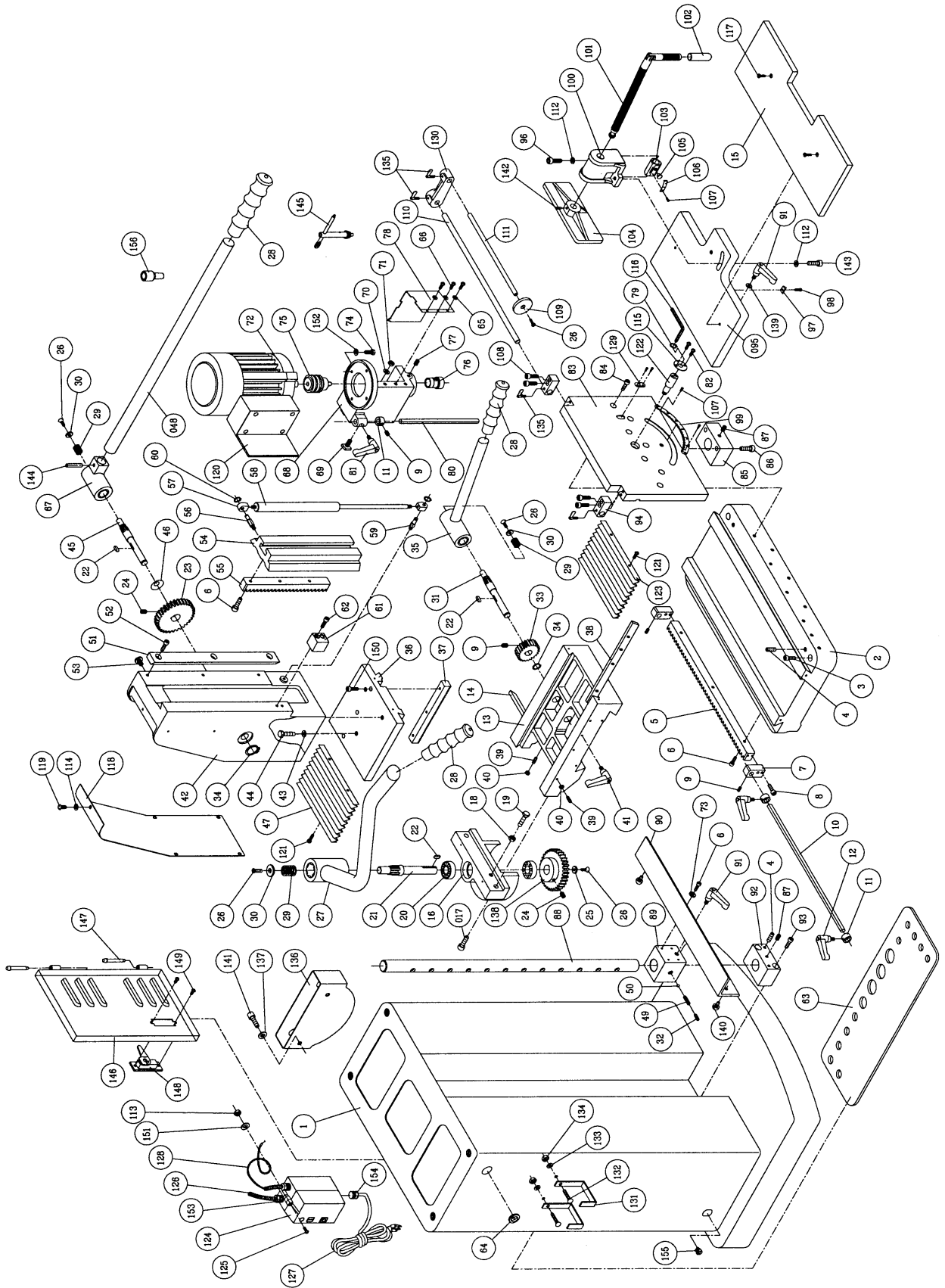
Troubleshooting

Trouble	Probable Cause	Remedy
Mortiser will not start.	No incoming power.	Check all plug connections.
	Fuse blown, or circuit breaker tripped.	Replace fuse, or reset circuit breaker.
	Cord damaged.	Replace cord.
	Motor bad.	Contact WMH technical service.
Drill bit does not come up to speed.	Extension cord too light or too long.	Replace with adequate size and length cord.
	Low current.	Contact a qualified electrician.
Mortiser vibrates excessively.	Stand on uneven surface.	Machine should be placed on level floor; use shims if necessary.
Noisy Operation.	Auger contacting chisel.	Increase offset of auger in relation to chisel. See page 9.
Workpiece Burns.	Chips not clearing from hole or auger.	Retract auger frequently to remove chips. Make sure chisel slot opens toward area already cut.
	Dull auger.	Resharpen, or replace auger.
	Feeding auger into workpiece too slowly.	Increase feed rate.
Drill bit wanders.	Auger sharpened incorrectly.	Resharpen auger correctly (page 17).
	Chuck jaws not tight.	Tighten chuck jaws.
	Bent auger.	Replace auger.
	Auger or chuck not installed properly.	Reinstall the chuck, or auger properly.
Wood splinters on the underside.	No backing board used.	Place a scrap board underneath the workpiece to prevent splintering.
Drill bit binds in workpiece.	Workpiece not clamped properly, pinching the auger.	Support or clamp workpiece firmly.
	Excessive feed rate.	Decrease feed rate.
	Chuck jaws not tight.	Tighten chuck jaws.

Replacement Parts

Replacement parts are listed on the following pages. To order parts or reach our service department, call 1-800-274-6848 between 7:30 a.m. and 6:00 p.m. (CST), Monday through Friday. Having the Model Number and Serial Number of your machine available when you call will allow us to serve you quickly and accurately.

720HD Heavy Duty Mortiser



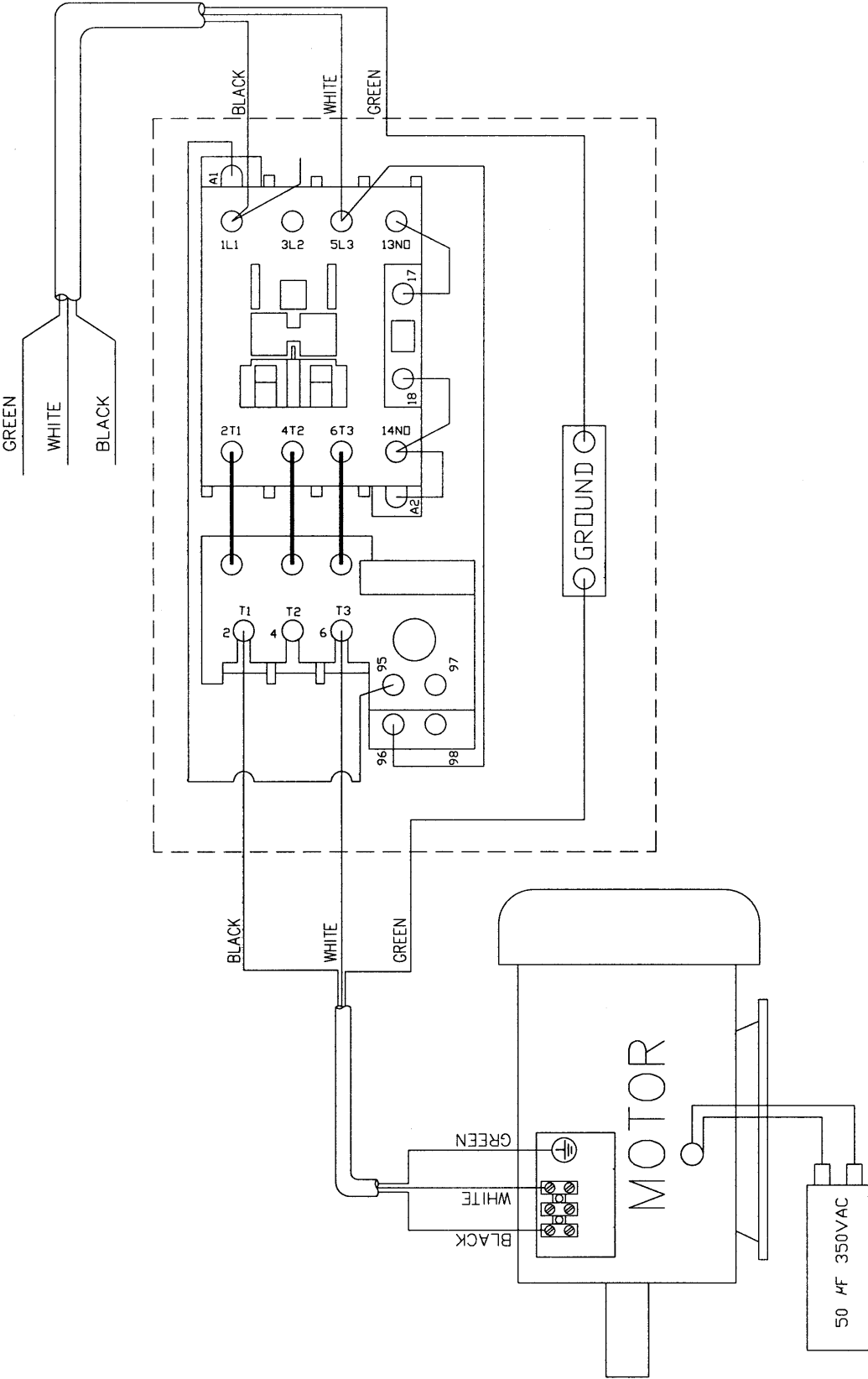
Parts List: 720HD Heavy Duty Mortiser

Index No.	Part No.	Description	Size	Qty
1	720HD-101	Stand		1
1	720HD-101	Stand		1
2	720HD-102	X Axis Slide Base		1
3	720HD-103	Socket Head Cap Screw	M10x65	4
4	720HD-104	Set Screw	M10x55	6
5	720HD-105	X Axis Gear Rack		1
6	TS-1503041	Socket Head Cap Screw	M6x16	7
7	720HD-107	Rod Support		2
8	TS-1503071	Socket Head Cap Screw	M6x30	4
9	TS-1523011	Set Screw	M6x6	4
10	6294144	Setting Rod		1
11	6294143	Setting Collar		3
12	720HD-112	Locking Handle	M6x10	2
13	720HD-113	X Axis Slide		1
14	720HD-114	Dovetail Gib		1
15	720HD-115	Wooden Table Top		1
16	720HD-116	Gear Housing		1
17	TS-1506031	Socket Head Cap Screw	M12x30	2
18	TS-1540081	Hex Nut	M12	1
19	TS-1492041	Hex Cap Screw	M12x40	1
20	BB-6004ZZ	Bearing	#6004ZZ	2
21	720HD-121	X Axis Shaft		1
22	720HD-122	Key	5x5x30	3
23	720HD-123	Feed Gear		1
24	TS-1523041	Set Screw	M6x12	4
25	720HD-125	Spacer		1
26	TS-1514021	Flat Head Socket Screw	M6x16	5
27	720HD-127	X Axis Handle		1
28	720HD-128	Plastic Handle Grip		3
29	6294166	Spring		3
30	6294167	Washer		3
31	720HD-131	Y Axis Shaft		1
32	TS-1525011	Set Screw	M10x10	1
33	720HD-133	Y Axis Feed Gear		1
34	720HD-134	Retaining Ring	STW-20	2
35	720HD-135	Y Axis Handle		1
36	720HD-136	Y Axis Slide		1
37	720HD-137	Y Axis Gear Rack		1
38	720HD-138	Dovetail Gib		1
39	720HD-139	Set Screw	M6x40	6
40	TS-1540041	Hex Nut	M6	6
41	720HD-141	Locking Handle	M6x38	1
42	720HD-142	Column		1
43	TS-2360121	Flat Washer	M12	3
44	TS-1506051	Socket Head Cap Screw	M12x40	3
45	720HD-145	Z Axis Shaft		1
46	720HD-146	Washer	D34.5xd20x0.4t	1
47	720HD-147	Pleated Dust Cover		1
48	720HD-148	Z Axis Handle		1
49	720HD-149	Spring		1
50	720HD-150	Steel Ball	D8	1
51	720HD-151	Gib		1
52	TS-1504031	Socket Head Cap Screw	M8x16	3
53	720HD-153	Screw		3
54	720HD-154	Z Axis Slide Base		1
55	720HD-155	Z Axis Gear Rack		1
56	720HD-156	Cylinder Fitting Shaft (Short)		1

57	720HD-157	Cylinder Head	2
58	720HD-158	Cylinder	1
59	720HD-159	Cylinder Fitting Shaft (Long)	1
60	720HD-160	E-Ring	ETW-7 2
61	720HD-161	Stopper Block	1
62	TS-1504061	Socket Head Cap Screw	M8x30 2
63	720HD-163	Shelf Cushion	1
64	720HD-164	Rubber Collar	5x50 1
65	TS-1550031	Flat Washer	M5 3
66	TS-1481021	Hex Cap Screw	M5x10 3
67	720HD-167	Handle Bracket	1
68	720HD-168	Headstock	1
69	720HD-169	Square Head Screw	1
70	TS-155010	Flat Washer	M16 1
71	TS-2310162	Hex Nut	M16x1.5P 1
72	720HD-172	Motor	1-1/2HP, 230V, 1Ph 1
73	TS-1551041	Lock Washer	M6 4
74	TS-1482061	Hex Cap Screw	M6x30 4
75	6294171	Chuck	JT33-13mm 1
76	6294198	Bushing	1-1/8" 1
	6294221	Bushing (not shown)	3/4" 1
	6294222	Bushing (not shown)	5/8" 1
77	TS-1524041	Set Screw	M8x16 2
78	720HD-178	Chuck Access Cover	1
79	720HD-179	Retaining Ring	ISTW-10 1
80	720HD-180	Depth Setting Rod	1
81	720HD-181	Locking Handle	M8x15 1
82	TS-1533032	Pan Head Screw	M5x10 2
83	720HD-183	Fence	1
84	TS-1505031	Socket Head Cap Screw	M10x25 7
85	720HD-185	Guide Bracket (Upper)	1
86	TS-1505061	Socket Head Cap Screw	M10x40 2
87	TS-1525021	Set Screw	M10x12 2
88	720HD-188	Guide Rod	1
89	720HD-189	Guide Bracket	1
90	720HD-190	Support Bracket	1
91	720HD-191	Locking Handle	M12x60 2
92	720HD-192	Guide Bracket (Lower)	1
93	TS-1505131	Socket Head Cap Screw	M10x80 2
94	720HD-194	Bracket	2
95	720HD-195	Table	1
96	TS-1504061	Socket Head Cap Screw	M8x30 1
97	720HD-197	Pointer	1
98	TS-2171012	Pan Head Screw	M4x6 1
99	720HD-199	Scale	1
100	6294187	Clamping Block	1
101	6294192	Locking Screw	1
102	6294223	Plastic Handle Sleeve	1
103	6294188	Rapid Nut	1
104	6294186	Clamping Jaw	1
105	6294189	Friction Toe	1
106	6294190	Spring	1
107	6294191	Rivet	5
108	TS-1502051	Socket Head Cap Screw	M5x20 4
109	6294193	Stop Disc	1
110	6294148	Length Setting Rod (Rear)	1
111	6294150	Length Setting Rod (Front)	1
112	TS-1550061	Flat Washer	M8 2
113	TS-1540021	Hex Nut	M4 2
114	TS-1550041	Flat Washer	M6 5
115	720HD-1115	Special Washer	1

116	720HD-1116	Allen Wrench		1
117	TS-1514031	Flat Head Socket Screw	M6x20	2
118	720HD-1118	Cover		1
119	TS-1534032	Pan Head Screw	M6x10	5
120	720HD-1120	Switch Board		1
121	TS-2245081	Flat Head Socket Screw	M5x8	8
122	720HD-1122	Stud		1
123	720HD-1123	Pleated Dust Cover		1
124	720HD-1124	Magnetic Switch		1
125	TS-1532042	Pan Head Screw	M4x12	2
126	720HD-1126	Sleeve		1
127	720HD-1127	Power Cord	1.25/3Cx3M	1
128	720HD-1128	Motor Cord	1.25/3Cx0.8M	1
129	720HD-1129	90° Scale		1
130	6294149	Length Setting Block		1
131	720HD-1131	Hook		2
132	TS-0152011	Carriage Bolt	5/16"-18x1"	2
133	TS-0680031	Flat Washer	5/16"	2
134	TS-0561021	Hex Nut	5/16"-18	2
135	6294145	Wing Screw	M6x16	4
136	720HD-1136	Table Holder		1
137	TS-1550061	Flat Washer	M8	2
138	720HD-1138	Gear		1
139	720HD-1139	Washer		1
140	720HD-1140	Pad	26L	2
141	TS-1504031	Socket Head Cap Screw	M8x16	2
142	TS-0267051	Set Screw	1/4"-20x1/2"	2
143	TS-1504061	Socket Head Cap Screw	M8x30	1
144	720HD-1144	Roll Pin	M6x36	1
145	6294204	Chuck Key		1
146	720HD-1146	Door		1
147	6294227	Pin		2
148	6294228	Door Latch		1
149	TS-2171012	Pan Head Screw	M4x6	2
150	TS-1503051	Socket Head Cap Screw	M6x20	3
151	TS-0680011	Flat Washer	3/16"	2
152	TS-0680021	Flat Washer	1/4"	4
153	720HD-1153	Cord Strain Relief		2
154	720HD-1154	Cord Strain Relief		1
155	720HD-1155	Cord Strain Relief		1
156	3005069	Chuck Extension Adaptor		1

Electrical Connections



POWERMATIC[®]

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